Army Regulation 50–7

Nuclear and Chemical Weapons and Materiel

Army Reactor Program

Headquarters
Department of the Army
Washington, DC
16 August 96

Unclassified

SUMMARY of CHANGE

AR 50–7
Army Reactor Program

This publication--

- Establishes policy, sets standards, fixes responsibilities, and builds a program architecture that improves oversight and codifies coordination and decision-making requirements previously lacking in the Army Reactor Program

- Replaces AR 385-80 which established the Army Reactor Committee for Health and Safety, and establishes the Army Reactor Council which serves an advisor to the Deputy Chief of Staff for Operations and Plans on Army reactor issues and policy.

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Effective 16 September 96

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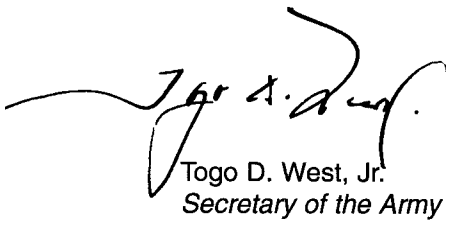

History. This is a new publication.

Summary. This regulation establishes policies, assigns responsibilities, and prescribes procedures for implementing the Army Reactor Program to ensure that Army reactors are operated in a safe, secure, and reliable manner from activation through decommissioning. This regulation designates the Deputy Chief for Operations and Plans as the proponent of the Army Reactor Program and the U.S. Army Nuclear and Chemical Agency as the focal point for the management of the Army Reactor Program and the Army Reactor Office. This regulation rescinds AR 385–80 and incorporates the responsibilities of the Army reactor Committee for Health and Safety into the responsibilities of the Army Reactor Council.

Applicability. This regulation applies to all Army organizations with a nuclear reactor or nuclear reactor support mission, to include organizations that program, develop, test, support, or operate nuclear reactors under Army authority. It applies to the Active Army and Army civilian employees. During mobilization, the proponent may modify the procedure's in this publication to support policy changes as necessary.

Proponent and exception authority. The proponent of the regulation is the Deputy Chief of Staff for Operations and Plans. The proponent has the authority to approve exceptions to this regulation that are consistent with controlling law and regulation. Proponents may delegate the approval authority, in writing, to a division chief under their supervision within the proponent agency who holds the grade of colonel or the civilian equivalent.

Army management control process. Following a review of guidance in AR 11–2, it is determined that this regulation does not contain management control provisions.

Supplementation. Supplementation of this regulation and establishment of command and local forms are prohibited without prior approval from HQDA (DAMO–SS), 400 Army Pentagon, WASH DC 20310–0430.

Interim changes. Not applicable.

Suggested Improvements. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publication and Blank Forms) directly to Director, U.S. Army Nuclear and Chemical Agency, ATTN: MONA–NU, 7150 Heller Loop, Suite 101, Springfield, VA 22150–3198 with a copy furnished to HQDA (DAMO–SS), 400 Army pentagon, Washington, DC 20310–0430.

Distribution. Distribution of this publication is made in accordance with the requirements of Initial Distribution Number (IDN) 093388, intended for command levels C, D, and E for Active Army only.

Contents (Listed by paragraph and page number)

*This regulation supersedes AR 385–80, 16 April 1991.

Unclassified

Contents—Continued

Chapter 1
Introduction

1–1. Purpose
This regulation establishes Department of the Army (DA)policies, assigns responsibilities, and prescribes procedures for the Army Reactor Program. The purpose of the Army Reactor Program is to ensure that Army reactors are operated in a safe, secure, and reliable manner from activation through decommissioning. This regulation designates the Deputy Chief of Staff for Operations and Plans DCSOPS) as the proponent of the Army Reactor Program and the U.S. Army Nuclear and Chemical Agency (USANCA) as the focal point for the management of the Army Reactor Program and the Army Reactor Office (ARO).

1–2. References
Required and related publications are listed in appendix A.

1–3. Explanation of abbreviations and terms
Abbreviations and special terms used in this regulation are explained in the glossary.

1–4. Responsibilities
a. The Deputy Chief of Staff for Operations and Plans (DCSOPS)has Army Staff (ARSTAF) responsibility and advocacy for the Army Reactor Program operations. The Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS) will—

(1) Coordinate policy for the Army Reactor Program.

(2) Ensure that Army reactors are operated in a safe, secure, and reliable manner.

(3) Implement DOD surety policies.

(4) Function as the ARSTAF single point of contact for reactor matters, except for radiation safety issues which are under the purview of the Army Safety Office.

(5) Provide surety and security review and comment during reactor studies, as requested.

(6) Coordinate on surety and security issues of all reactor study reports.

(7) Integrate other ARSTAF program responsibilities into the Army Reactor Program.

(8) Approve reactor facility reliability operating standards and certification process.

(9) Approve, in coordination with policy proponents when appropriate, policy and procedures for the authorization, acquisition, ac counting, control and disposition of nuclear reactors and special nuclear material.

(10) With concurrence of the Assistant Chief of Staff for Installation Management (ACSIM) and the Director of Army Safety(DASAF), approve environmental protection and monitoring management policy and procedures and insure that all environmental documentation required by AR 20–2 is properly prepared.

(11) With concurrence of the ACSIM and the DASAF, approve decommissioning strategy policy and execution procedures.

(12) With concurrence of the ACSIM and the DASAF, approve deactivated reactor environmental, safety, and security standards.

(13) With concurrence of the ACSIM and the DASAF, approve deactivated reactor management policy.

(14) Limit authorization for operation of a reactor facility, either active or deactivated, and possession of special nuclear material (SNM) to the first general officer in the chain of command.

(15) Director of Strategy Plans and Policy, ODCSOPS will provide a representative to serve as a permanent member of the Army Reactor Council (ARC).

b. The Director, U.S. Army Nuclear and Chemical Agency(USANCA) will—

(1) Manage the Army Reactor Program for the DCSOPS.

(2) Establish and maintain the Army Reactor Office (ARO).

(3) Establish and maintain a permanent position, the Army Reactor Program Manager (ARPM), to provide continuity to the reactor program.

(4) Serve as focal point for interaction and coordination with Department of Defense (DOD), Department of Energy (DOE), Nuclear Regulatory Commission (NRC), other Federal and State agencies, and Army agencies involved in the Army Reactor Program (ARP) on technical issues.

(5) In coordination with the DASAF, who issues DA radiation authorizations (IAW AR 385–11), issue reactor permits.

(6) Issue certification letters to applicants who successfully complete the reactor operator certification process.

(7) Conduct reactor studies and supporting activities as required.

(8) Forward reactor studies to the Director of Strategy Plans and Policy, ODCSOPS for approval.

(9) Approve reactor system documents and changes contained in table 2–1 of this regulation.

(10) Conduct reactor system audits.

(11) Perform quality assurance program reviews.

(12) Conduct surety assistance visits to assess the effectiveness of the Army Nuclear Surety Program.

(13) Develop and issue design and evaluation criteria for reactors based on the four Army Reactor Program Objectives contained in paragraph 1–7 of this regulation.

(14) Review reactor personnel training requirements, certification procedures, and qualification criteria to assure compatibility with applicable national nuclear standards.

(15) Approve tests and experiments which are not addressed in existing reactor documents.

(16) Perform other reactor related–tasks as directed by the DCSOPS.

(17) Establish and chair the Army Reactor Council (ARC).

(18) Provide chairperson, secretary, and staff support required for each study conducted by, or directed by, the ARC.

(19) Determine agencies that will be required to provide members to augment the ARC personnel.

(20) Request participation in reactor studies from appropriate agencies.

(21) Provide the Director of Strategy Plans and Policy, ODCSOPS, an annual report that contains the status of open ARC recommendations with copies provided to the Radiological Hygiene Consultant (Office of the Surgeon General) and the DASAF.

(22) Establish reactor facility reliability operating standards and certification process based on Federal statutes and DOD directives.

(23) Oversee United States Army Corps of Engineers (USACE)decommissioning execution.

(24) Oversee USACE execution of deactivated reactor management program.

c. The Deputy Chief of Staff for Personnel (DCSPER) will provide general staff supervision for personnel reliability and establish personnel policies to support implementation of the Army Nuclear Surety Program. The DCSPER will monitor personnel standards and procedures to ensure effective and uniform implementation of the Personnel Reliability Program (PRP).

d. The Director of Army Safety, as proponent for Army Safety(IAW AR 385–10) and Army Radiation Safety (IAW AR 385–11), will—

(1) Develop and manage an Army–wide reactor safety program.

(2) Coordinate on all reactor studies and on any other action identified by the Army Reactor Office that involves reactor safety.

(3) Coordinate DOE assistance in support of reactor health and safety under provisions of section 91b of the Atomic Energy Act of 1954, section 2121(b), title 42, United States Code, through the Assistant to the Secretary of Defense (Atomic Energy).

(4) Implement Nuclear Accident Investigation Board responsibilities per AR 15–22.

(5) Provide a health physicist and a safety specialist to serve as permanent members of the Army Reactor Council (ARC).

(6) Provide assistance to the ARC in developing deactivated reactor environmental and safety standards.

(7) Serve as DA focal point for reactor and decommissioning reactor safety issues.

e. Commander, United States Army Corps of Engineers (USACE)will—

(1) Act as the single point of contact at Headquarters, Department of the Army (HQDA) for nuclear reactor engineering and design, reactor construction, and decommissioning design and implementation.

(2) Develop procedures for compliance and ensure compliance with all safety and environmental requirements for deactivated reactors.

(3) Conduct decommissioning studies and report status of reactor facilities undergoing decommissioning to the Army Reactor Office with a copy furnished to the DASAF.

(4) Inform the Army Reactor Office of the status of the environmental impact analysis process for reactors.

(5) Coordinate on all reactor studies.

(6) Participate in reactor audits and studies, as requested.

(7) Ensure compliance with environmental requirements for designing, constructing, and decommissioning Army nuclear reactors.

(8) Execute environmental restoration activities as directed by the ACSIM.

(9) Provide a representative to the Army Reactor Council (ARC).

(10) Formulate decommissioning strategy and execution procedures.

(11) Develop deactivated reactor management policy.

f. The Assistant Secretary of the Army for Installations, Logistics and Environment (ASA(IL&E)) provides policy, program guidance, and oversight for reactors and reactor property undergoing decommissioning to ensure safety, environmental, and occupational health statutory compliance.

g. Assistant Secretary of the Army for Research, Development and Acquisition (ASA(RDA)) will provide guidance on the management of reactors used for research, development, and testing.

h. The Inspector General (TIC) will direct and perform independent inspections and evaluations of the Army Reactor Program to ensure compliance with the reactor policies established by the DCSOPS and other agencies within and outside the Department of Defense (DOD).

i. The Surgeon General (TSG) will—

(1) Establish medical policies and procedures in support of the Army Reactor Program.

(2) Provide policy and guidance on occupational and public health.

(3) Provide policy and guidance on the medical aspects of programs to train and certify personnel.

(4) Participate in reactor studies as required.

(5) Coordinate on all reactor study reports.

(6) Provide one member to the Army Reactor Council (ARC).

j. The Deputy Chief of Staff for Logistics (DCSLOG) manages logistical aspects of the Army Reactor Program and develops policy and procedures for the authorization, acquisition, accounting, control, and disposition of nuclear reactors and nuclear material.

k. The Deputy Chief of Staff for Intelligence (DCSINT) will supervise counterintelligence support to reactor sites and activities and establish the Army Personnel Security Program (AR 380–67).

l. Commanding General, U.S. Army Operational Test and Evaluation Command (CG, OPTEC), will provide guidance for management of the Army's operational test and continuous evaluation programs.

m. Director, U.S. Army Test and Evaluation Management Agency(USATEMA) will provide guidance on the United States Army Test and Evaluation Command (TECOM) testing program.

n. The Chief of Public Affairs (CPA) will manage public affairs activities in support of the Army Reactor Program.

o. The Commanding General, U.S. Army Training and Doctrine Command (TRADOC), will develop and publish doctrine for NAIRA.

p. The Assistant Chief of Staff for Installation Managemen-t(AC–SIM) will—

(1) Provide policy guidance on environmental protection and environmental restoration issues pertaining to both active and inactive reactors.

(2) Provide oversight of installation restoration activities associated with the closure of reactor sites.

q. Commanders of major Army commands (MACOMs) possessing nuclear reactors will—

(1) Ensure that command nuclear surety, security, health, al safety programs are consistent with ARs 40–5, 50–5, 190–5 385–10, 385–11, and this regulation.

(2) Notify the Army Reactor Office of plans to build or acquire reactor as early as possible in the development process and before applying for a reactor system construction permit.

(3) Apply for appropriate reactor permits by submitting the documents listed in table 2–1 of this regulation to the Army React Of fine.

(4) Send reports and plans as required by this regulation, to t Army Reactor Office.

(5) Provide technical support and data to the organizations participating in nuclear reactor studies.

(6) With USACE, implement a quality assurance program 1 designing, constructing, and decommissioning reactor facilities a for major modifications that affect reactor system safety or security.

(7) Establish a reactor safety program.

(8) Send requests for reactor modifications that affect reactor system safety or security to the Army Reactor Office.

(9) Send requests for conducting tests or experiments that are not addressed in existing nuclear reactor documents to the Army Reactor Office.

(10) Provide a representative to the Army Reactor Council (ARC).

r. Commanders of major subordinate commands possessing nuclear reactors will—

(1) Implement a surety program IAW AR 50–5.

(2) Review reports and activities of the Reactor Safety Committees.

(3) Forward reactor modifications which involve unresolved safety questions or a change to the technical specifications through command channels to the ARC for review.

(4) Conduct reviews of reactor safety, security, operations, and personnel reliability programs.

(5) Manage the test workload of the reactor facilities.

(6) Provide a representative to the Army Reactor Council (ARC).

s. Commanders responsible for reactor facilities will—

(1) Ensure the safety, security, and reliability of reactor operations.

(2) Implement a surety program JAW AR 50–5.

(3) Implement a radiation safety program IAW AR 385–11.

(4) Organize a Reactor Safety Committee (RSC).

(5) Forward reactor modifications which involve unresolved safety questions or a change to the technical specifications through command channels to the ARC for review.

(6) Provide appropriate representation to advise the ARC on r actor facility issues.

(7) Identify, investigate, report, and correct problems that affect the Army Reactor Program.

(8) Administer the reactor staff certification program.

t. Directors of reactor facilities—

(1) Manage a safe, secure, and reliable reactor facility.

(2) Establish a reactor staff training program for reactor operators.

(3) Report to the ARC any safety defects or unresolved safe issues involving reactor operations.

(4) Forward reactor modifications which involve unresolved safety questions or a change to the technical specifications through command channels to the ARC for review.

(5) Implement a quality assurance program.

u. Reactor safety managers. Each reactor safety manager (RSM)the point of contact, independent of the reactor staff, for safe matters. As independent advisor to the responsible reactor facility commander, the RSM identifies safety problems to the reactor facility director and responsible reactor facility commander for resolution. The RSM—

(1) Performs an annual reactor system audit.

(2) Reviews corrective actions. (The RSM is not responsible for deficiencies that are the responsibility of the facility director or functional managers and supervisors.)

(3) Helps prepare nuclear accident reports.

(4) Reviews accident reports from higher headquarters or other units and NRC licensee event reports for non–power reactor systems.

(5) Coordinates on locally developed procedures and plans that affect reactor safety.

(6) Provides required radiation safety training to all reactor personnel and visitors.

v. Reactor leaders or supervisors. Each reactor leader, or supervisor, is responsible for daily reactor operations, technical specification compliance, maintenance of the reactor facility, and ensuring that only trained and certified personnel participate in reactor operations.

w. Assigned individuals. Certified personnel are the most important pan of the nuclear reactor program. These individuals must be technically competent, understand the nuclear safety and security aspects of their duties, be motivated, and reliable. They will—

(1) Report reactor safety hazards and security problems to supervisors.

(2) Meet and comply with PRP requirements in AR 5–5.

(3) Perform all tasks using approved procedures.

1–5. Policy

The Army's reactor policy is to follow to the maximum extent possible, the regulations of the U.S. Nuclear Regulatory Commission and the recommendations of the National Council on Radiation Protection and Measurements.

1–6. The Army Reactor Program concept

The Army Reactor Program is designed to ensure that Army reactors are designed, constructed, operated, maintained, and decommissioned per U.S. national standards. It also provides controls to prevent the loss of special nuclear material (SNM), nuclear accidents, incidents, or unauthorized reactor operations.The Army Reactor Program establishes policies, assigns responsibilities, and prescribes procedures to ensure that Army reactors are operated in a secure and reliable manner from activation through decommissioning.

1–7. Reactor Program objectives

Army Reactor Program standards provide positive measures that—

a. Maintain radiation exposures to the public, the environment, and operating personnel to levels within regulatory limits and as low as reasonably achievable (ALARA).

b. Minimize the probability of a reactor accident or incident.

c. Minimize the consequences of a reactor accident or incident.

d. Ensure adequate security of reactors.

1–8. Army Reactor Council

a. The Army Reactor Council (ARC) will provide overall executive oversight to assure that the Army Reactor Program (ARP) is in compliance with DOD directives concerning

(1) Reactor safety.

(2) Radiation exposures of personnel and the general public.

(3) Environmental impact and monitoring.

(4) Physical security of special nuclear material.

b. The ARC will provide a formal mechanism to assure and document to the DCSOPS and the DASAF the safety and status of the Army Reactor Program.

c. The ARC will monitor the utilization of the operating Army reactors and coordinate within the Army and with other Services and Defense agencies to assure that the ARP is fully responsive to national nuclear test, research, and other requirements.

d. The ARC will approve proposals for new reactors and sponsor associated technical studies as required.

e. The ARC, in coordination with the ACSIM, will approve decommissioning decisions and plans and will certify when decommissioning actions are completed.

f. The ARC will review the manpower and funding level of the Army Reactor Programs and initiate appropriate action to remedy deficiencies. This is particularly important for the operating reactors which require minimum base line funding and staffing to maintain expertise and assure compliance with mandatory requirements.

g. The ARC is an ad hoc council from ODCSOPS which meets as required, at least semiannually. Membership will include ODCSOPS, DASAF, USANCA, USACE, OTSG, and MACOMs and major subordinate commands with reactor facilities. Activities operating reactor facilities, such as Aberdeen Proving Ground (APG) and White Sands Missile Range (WSMR), will be invited to present data and provide specific expertise as required.

h. The ARC will conduct an annual operational review to include health and safety to provide assurance that Army nuclear reactor systems are designed, built, and operated IAW all legal requirements.

1–9. Army Reactor Office

a. There will be an Army Reactor Office (ARO) headed by an Army Reactor Program Manager (ARPM) who is also the Executive Secretary, of the ARC.

b. Functions of the ARPM include—

(1) Managing the Army Reactor Office.

(2) Monitoring Federal statutes and DOD instructions to ensure their inclusion as required in Army regulations and policy applicable to the Army Reactor Program.

(3) Calling meetings of the ARC as required but at least semiannually. And bringing up issues raised by the operating commands or others for action.

(4) Following up on ARC decisions with studies, changes to Army regulations, resource allocation, etc. And, obtaining consultants to perform expert studies when required.

(5) Issuing an annual report on the ARP to include input from the ARC and from each reactor project.

(6) Participating in DAIG reactor facility inspections (RFIs)and nuclear management evaluations (NMEs) as requested. Obtains resolutions of issues as they arise at interpretation of Army regulations, directives, etc.

(7) Collecting, coordinating and providing guidance on the mission and operation of operating and proposed reactors and resources required to support operation and regulatory requirements.And, bringing up unresolved issues to the ARC for resolution.

(8) Coordinating with non–Army agencies concerning reactor projects and utilization to avoid duplication and maximize use of DOD resources. And, raising such issues with the ARC.

1–10. Supplemental guidance

a. This regulation—

(1) May be cited by commanders as the authority for requesting support or items of equipment necessary to implement authorized optional procedures to enhance the safety and security of nuclear reactors for which they are responsible.

(2) Does not restrict the authority of a commander to deviate from its policies and procedures in an emergency when compliance would aggravate the situation or prevent return to a normal operating environment. The commander will make required reports (AR 50–5 and AR 385–40) in a timely manner and coordinate with proper authorities to the maximum extent possible to ensure that inappropriate actions do not exacerbate the situation. The report will include any deviations from policy that the commander approved.

b. The correlation of a variety of Army functions and activities is necessary to ensure that nuclear reactors and material are kept in a safe and secure environment.

c. Nuclear surety program activities address every aspect of the operational life of nuclear reactors. These activities include:

(1) Nuclear safety programs and procedures to ensure compliance with approved safety analysis report and technical specifications.

(2) Physical security measures to preclude unauthorized access to

and use of special nuclear materiel, ancillary equipment, and documents.

(3) Procedures to ensure the reliability of personnel designated for or assigned to nuclear duty positions.

(4) Logistical procedures (for example, issue, storage, handling, maintenance, and transportation).

(5) Operational procedures that impact on the safety and security of nuclear reactors.

(6) Nuclear Accident and Incident Response and Assistance(NAIRA).

d. DA reactor security matters will be managed as directed by AR 19–54. AR 19–54 prescribes the physical security policy, criteria, and standards for securing reactor facilities and the special nuclear material (SNM) used as fuel by these reactors.

e. The safety, environment, security, and reliability of Army reactors, both active and inactive, are command responsibilities.The Army Reactor Program, the Army Reactor Office, and the Army Reactor Council have been established to assist commanders in the execution of this responsibility.

f. This regulation is not intended to require duplicated efforts for U.S. Nuclear Regulatory Commission (NRC) licensed Army reactors. When NRC regulations and this regulation prescribe the same or similar requirements, the NRC regulations will be followed with copies of required documentation furnished through command channels to the ARO.

Chapter 2
Reactor Permits

2–1. Permit types

Each responsible commander will apply for the following permits:

a. Construction permit to build or acquire the reactor.

b. Load and test permit to receive fuel, initialize core loading and characterize and test the reactor.

c. Operating permit for routine use of the reactor.

d. Decommissioning permit to decommission the reactor.

e. Special permits to cover other operations.

2–2. Application procedures

Each responsible commander will send applications for reactor permits through command channels to the Army Reactor Office(ARO). Content of applications will be specified by the ARO.Applications will include—

a. Type of permit application.

b. How the facility will be used.

c. Time period for which the permit is required.

d. Documentation listed in table 2–1 of this regulation.

2–3. Permit approval

The Army Reactor Office issues permits after HQDA (ODCSOF-(DAMO–SS) and DASAF (DACS–SF)) approval of the appropriate reactor study report.

2–4. Permit suspension

The Army Reactor of five or the facility' s operational chain command may suspend permits if the reactor staff fails to maintain the requirements of the permit or if public safety is at risk. The MACOM commander will immediately notify the Army React Office of the suspension, which remains in effect pending HQD(ODCSOPS (DAMO–SS) and DASAF (DACS–SF)) review. Only HQDA (ODCSOPS, DAMO–SS) is authorized to remove suspensions.

2–5. Permit amendments

Only HQDA (ODCSOPS (DAMO–SS) and DASAF (DACS–SF) can approve permit amendments.

Table 2–1
SUPPORT DOCUMENTS FOR REACTOR STUDY PERMITS

Type	Responsible commander will forward to USANCA	Product
Initial Reactor Study	Application for a construction permit to include: Preliminary Safety Analysis Report Preliminary Decommissioning Plan Preliminary Physical Security Plan Preliminary Emergency Plan Approved Environmental Assessment or Environmental Impact Statement Environmental Radiation Surveillance Plan	Published report and construction permit, if approved.
Preoperational Reactor Study	Application for a load and test permit to include: Updated Safety Analysis Report Updated Decommissioning Plan Updated Physical Security Plan Updated Emergency Plan Preliminary Technical Specifications Preliminary Training Plan Preliminary Requalification Plan Preliminary Maintenance Plan	Published report and load and test permit, if approved.
Operational Reactor Study	Application for operating permit to include: Facility Safety Analysis Report Facility Decommissioning Plan Facility Physical Security Plan Facility Emergency Plan Facility Technical Specifications Facility Training Plan Facility Requalification Plan Facility Maintenance Plan	Published report and operating permit, if approved.
Special Reactor Study	Application for special permit to include(as required by AR): Special Safety Analysis Report Appropriate Supporting Documents	Published report and special permit, if approved.
Decommissioning Reactor Study	Application for decommissioning permit to include: Final Decommissioning Plan	Published report and decommissioning permit, if approved.

Chapter 3
Reactor Studies

3–1. General
Reactor studies evaluate Army reactors for compliance with the Army Reactor Program Objectives (paragraph 1–7) and the system design and evaluation criteria. Study participants will ensure facility operations and programs meet the commitments in required facility documentation. The Army Reactor Office appoints the study chairman and designates organizations to participate in the studies. The studies will address the applicable areas listed in appendix B.

3–2. Study report
a. The Army Reactor Office documents study conclusions and recommendations. Study participants will sign the report for their organizations.

b. HQDA (ODCSOPS, DAMO–SS) will provide guidance to the Army Reactor Office on the scope of the study.

c. The Army Reactor Office publishes and distributes the study report.

3–3. Initial Reactor Study
This study evaluates the system early in the development cycle to determine if the design provides adequate reactor safety and security. This study is conducted when the design concept is firm so that deficiencies can be corrected without undue cost.

3–4. Preoperational Reactor Study
This study evaluates the organization's readiness to conduct initial reactor operations and determines if construction and staffing provide adequate reactor safety and security.

3–5. Operational Reactor Study
This study examines safety features in the system's design, facility technical specifications, and procedures to ensure the system meets the Army Reactor Program Objectives and evaluates its readiness to conduct continuing operations.

3–6. Special Reactor Study
As recommended by the Army Reactor Office and approved by HQDA (ODCSOPS (DAMO–SS) and DASAF(DACS–SF)), studies may be used to evaluate—

a. Potentially unsafe conditions revealed through operational experience.

b. Modifications, alterations, or retrofits that affect reactor safety or security.

c. Tests that affect reactor safety or security.

d. Significant changes or modifications in the operational concept that affect reactor safety or security.

e. Any other condition that could affect reactor safety or security.

3–7. Decommissioning Reactor Study
This study evaluates the ability of the MACOM and/or USACE to decommission the reactor. Decommissioning actions cannot begin until the study is approved by HQDA (ODCSOPS (DAMO–SS) and DASAF (DACS–SF)).

3–8. Study findings
The Army Reactor Office will recommend the action agency and suspense for each finding requiring corrective action. The action agency must send the Army Reactor Office a status report of corrective actions taken. Monthly status reports will be submitted by the action agency until corrective action is completed. The Army Reactor Office determines whether corrective action is complete.

Chapter 4
Required Reactor Documentation

4–1. Required documentation
Table 2–1 of this regulation lists the documents required to support each reactor study.

4–2. Safety analysis reports
The format of NRC Regulatory Guide 1.70, Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants may be used as a guide for formatting the following reports:

a. Preliminary Safety Analysis Report will contain information about the proposed system in relation to the development program.

b. Updated Safety Analysis Report will contain the proposed operational concept and information about the reactor.

c. Facility Safety Analysis Report will contain a description of the reactor and how it will be operated.

d. Special Safety Analysis Report will contain a description of the reactor and the proposed modifications, procedural change, or test.

4–3. Technical specifications
Technical specifications are derived from the Safety Analysis Report and include—

a. Safety limitations and limiting safety system settings.

b. Limiting conditions for operation.

c. Surveillance requirements.

d. Design features.

e. Administrative controls.

4–4. Training Plan.
The training plan outlines the operating personnel training program and the reactor health physics training program. The technical qualifications of certified operators are specified in facility documentation reviewed by the Army Reactor Office and The Director of Army Safety.

4–5. Requalification Plan
The requalification plan outlines the requalification program for reactor operators.

4–6. Physical Security Plan
The physical security plan provides measures for resource protection and for countering threats that may be directed against the reactor system and must comply with the requirements in AR 190–54.

4–7. Emergency Plan
This plan contains emergency procedures for dealing with emergencies, accident situations, and breaches of physical security unique to a reactor facility. This plan will be exercised at least annually, by each reactor facility director, in coordination with the responsible commander.

4–8. Decommissioning Plan
This plan identifies status and operating history, radioactive material inventory, planned decommissioning program, radiological and non–radiological safety analyses, and organization and control.

4–9. Environmental Radiation Monitoring (ERM)
This plan outlines the collection and analysis of ERM samples. The plan must comply with Nuclear Regulatory Commission(NRC) guidelines and National Council on Radiation Protection and Measurements (NCRP) recommendations approved by the Army Reactor Office (ARO).

4–10. Health Physics Plan
The reactor facilities will be designed to ensure that exposure of personnel to radiation is maintained as low as is reasonably achievable (ALARA); and to ensure that potential future health problems are not encountered. Each facility must, therefore, maintain a formal radiological safety program documented by an approved Health Physics Plan. The Health Physics Plan is maintained as a single

entity and contains the following management and procedural details:

a. Health physics personnel responsibilities and staff organization.

b. Training of personnel (AR 40–5 and AR 40–14).

c. Personnel monitoring and exposure limits, procedures for recording exposures, and procedures for evaluating overexposures (AR 40–14).

d. Procedures for issuance of work permits in radiation areas(AR 40–14).

e. Maximum acceptable contamination levels (AR 385–11).

f. Operational monitoring and surveys (AR 40–5 and AR 385–11)

g. Use, maintenance, and calibration of radiation monitoring equipment (AR 40–5 and TB 43–180).

h. Decontamination procedures.

i. Radioactive waste disposal and effluent release procedures(AR 385–11)

j. Radiation storage area (location and procedure for use).

k. Radiation placarding and labeling (AR 385–30).

l. Procedures during an emergency, including accidents and incidents, and the duties of personnel in such events (AR 40–5 and AR 50–5).

m. Procedures for qualifying health physics personnel.

n. Health physics records and documentation.

o. Procedures to validate a commitment to keep all radiation exposures ALARA.

p. Maintenance of records (AR 25–400–2).

Chapter 5
Reviews and Audits

5–1. Quality Assurance Program Review (QAPR)

The QAPR is a series of reviews to assess the MACOM quality assurance programs. It is conducted on an as required basis by the Army Reactor Office during design, construction, decommissioning, and major modifications. The review covers quality assurance records and procedures affecting design, fabrication, construction, equipment installation, and test and checkout. The requirements are separate from routine inspections. Each reactor facility director will notify the Army Reactor Office before beginning any modification that affects reactor safety or security. The Army Reactor Office will determine if a QAPR is needed.

5–2. Facility audits

Audits are conducted to determine if a facility is operating in compliance with its operating permit. The Army Reactor Office continuously monitors operational reactor systems and audits each area in appendix B at least once every 2 years. A report documents the findings, observations, and commendable items found during the audit and provides an assessment of the area under review. The audited unit is responsible for correcting each finding as quickly as possible and providing monthly status reports through command channels to the Army Reactor Office until all findings requiring corrective action are completed. The report includes an estimated completion date for all corrective actions. The Army Reactor Office determines whether corrective action is complete.

Chapter 6
Unit Reactor Program

6–1. Reactor operating reports

Each reactor facility director will send through command chant to the Army Reactor Office an initial reactor startup report, quarterly reactor operating reports and an annual summary reactor operating report (due 30 June). Annual reports summarize reactor system use, corrective maintenance, unscheduled shutdowns, reportable concurrence, and changes and tests.

6–2. Environmental radiation monitoring reports

Each reactor facility director will send—

a. Quarterly reports to the local environmental manager, radiant protection officer, and post environmental protection office which include the results of area monitoring, sample analyses, and other significant data (that is, releases into the environment exceed allowable levels). A copy of the quarterly reports will be forwards to the ARO through command channels.

b. Annual reports of summarized data to the Army Reactor 4 fine (due 30 June).

6–3. Reactor Safety Committee

Each responsible commander will establish a Reactor Safety committee to ensure coordination among organizations involved in reactor construction, operations, and decommissioning. The follow guidelines apply:

a. Each responsible commander, or his or her designated representative, shall chair the committee. The Reactor Safety Commit may be combined with other radiation safety councils or committee if they fully address all reactor matters at each meeting.

b. The committee must have a written charter, including opening procedures and voting rules.

c. Each reactor facility director, facility health physicist, rear safety manager (RSM), post safety officer, and post radiation safety officer are members. There must also be at least one member from outside the facility who is knowledgeable in the design and option of the particular reactor type at the facility.

d. The committee will include representatives from the military medical services, civil engineering, safety, disaster preparedly local environmental of fine, and the office of the staff judge advocate as appropriate.

e. The committee must meet at least semiannually.

f. Participants advise the chair on matters affecting reactor safety security, reliability, and environmental issues.

g. Each responsible commander maintains minutes, assigns and items, and provides a copy of the minutes through command channels to the Army Reactor Office for subsequent Army Reactor Council review.

h. Committee minutes will be maintained per AR 25400

6–4. Personnel Reliability Program (PRP)

The PRP provides assurance that personnel are reliable, not u the influence of any substance, and are not mentally or physic impaired in a way that could adversely affect their perform Each responsible commander will implement the PRP IAW 50–5.

6–5. Personnel training

Reactor facility directors will ensure that the training necessary maintain the technical and professional competence of reactor personnel is conducted and documented.

6–6. Faculty maintenance

Reactor facility directors will ensure that the maintenance necessary to sustain the quality of reactor operations is conducted on a continual basis. Reactor facility directors will ensure maintenance is conducted and documented. Facility documentation will specify those maintenance tasks that are reactor related and which of the tasks require direct supervision. All reactor–related maintenance requires pre–approval by the on–duty reactor leader, or supervisor, and will be performed or supervised by a reactor leader or supervisor.

6–7. Annual reactor audit

Each RSM performs an annual audit of the reactor program.Each area listed in appendix B will be audited. Areas may be audited in one effort or spaced throughout a 12–month period. A report documents the annual audit. The annual audit may be combined with other safety inspections, audits, or reviews. Audit reports will be

maintained by each RSM and will be available for inspection by the Army Reactor Office and the DAIG.

6–8. Quality Assurance Program

Quality assurance is a continuous process to prevent or reduce any impact on public health and safety as a result of a facility's operation. This is particularly important when making facility modifications. Directors of reactor facilities will ensure all changes are documented and do not decrease the margin of safety of the original design. The quality assurance program will be consistent with nuclear industry standards.

Chapter 7
Operator Requirements

7–1. Operator qualifications

Technical qualifications of certified operators are specified in facility documentation reviewed by the Army Reactor Office.

7–2. Medical examinations

A medical examination is required before certification or when a significant change in medical status occurs. The Army Reactor Office will coordinate with the Office of the Surgeon General (OTSG)to establish medical examination criteria for certified reactor operating staff members. In the process of qualifying an operator, the appropriate reactor facility director will coordinate with the supporting medical facility to determine that the operator meets the medical criteria established by the Army Reactor Office. The Army Reactor Office requires copies of approved waivers for certified reactor operating staff members including detailed statements of any limitations associated with the waiver. The limitations are included in the operator certification letter.

7–3. Medical restrictions

Medical restrictions are imposed by each reactor facility director at the recommendation of the local medical authority as prescribed by AR 5–5.

Chapter 8
Operator Training Program

8–1. Candidate training

Directors of reactor facilities will—

a. Establish a training program to provide candidates with the knowledge and skills needed to safely operate and maintain the reactor and ensure its security.

b. Include any other topics applicable for each operator position and review the training biennially.

c. Make the training program commensurate with the level of responsibility in paragraph 8–2.

8–2. Required abilities

a. Reactor operators (ROs). ROs must have the ability to operate the controls and monitor the instrumentation of the reactor and perform other required tasks during normal, abnormal, and emergency operations.

b. Reactor leaders (RLs) and reactor supervisors (RSs). RLs and RSs must have the ability to supervise daily reactor operations and maintenance operations. They direct the activities of reactor operators. They must be proficient in reactor related administrative requirements; and are responsible for adherence to reactor technical specifications.

c. Senior reactor leaders (SRLs) and senior reactor supervisors (SRSs). SRLs and SRSs must have the ability of a reactor leader or reactor supervisor plus additional experience and training to be responsible for facility specific responsibilities such as the safety evaluation of reactor tests and experiments.

8–3. Requalification Program

Each reactor facility director will establish an ongoing requalification program for certified operators to ensure competence, address topics not reinforced by direct or constant use, and improve weak performance areas. The requalification program implements the approved requalification plan. Each reactor facility director may integrate the requalification plan and the training plan into a single coordinated program. Individuals must be requalified every 2 years, effective from the date of certification.Each reactor facility director may request an extension of up to 90 days for extenuating circumstances. Each reactor facility director will submit their requalification plan for review, through command channels, to the Army Reactor Office every 2 years. The plan will contain—

a. Course content (the training topics in table 8–1 as a minimum).

b. Descriptions of tests and passing criteria. Requalification tests may be administered before training.

c. A schedule of training which completes each major topic in 2 years.

8–4. Recurring training requirements

Certified reactor operating staff members will meet the following recurring training requirements:

a. Review the contents of abnormal and emergency procedures annually.

b. Receive training on changes to facility documentation, including procedures, before performing certified duties affected by the changes.

c. Be promptly retrained if any evaluation indicates a deficiency in a critical area.

8–5. Training documentation

Each reactor facility director will maintain the following training and certification documents:

a. Current training and requalification programs.

b. Documents used in certification and requalification including operating procedures and training and reference materials.

c. Training and certification records, including copies of completed training, current medical certification, the certification letter issued by the Army Reactor Office, and decertification records.

8–6. Operator certification process

a. Certification tests. Each reactor facility director will implement the certification of reactor operations staff members through written and performance tests. The written test will cover the categories in table 8–1 as applicable to each specific reactor facility. A passing score in all applicable categories is required for certification.The performance test will evaluate an individual's operational and or maintenance skills, performance, knowledge and ability to communicate. Performance testing will be conducted under the supervision of a certified senior reactor leader/supervisor.Candidates who fail either test may retake it after completing remedial training. Candidates who fail in one or two categories of the written test may be retested in the failed categories, otherwise they must retake the entire test.

b. Applications and document reviews. After ensuring the applicant is qualified, the reactor facility director will forward the following through command channels to the Army Reactor Office:

(1) Results of certification test.

(2) Copies of current operational procedures (normal and emergency), current operational data and formulas, and test questions, including acceptable answers for each question and credit to be given for each question or parts of questions.

c. Official certification. Upon review of certification test results, the Army Reactor Office will issue a certification letter to applicants who successfully complete the certification process. Certification is valid for 4 years from the date of issue or until decertification.

8–7. Operator proficiency requirements

a. Minimum reactivity manipulations. Certified operators must perform at least two significant reactivity manipulations each quarter, as defined by the appropriate reactor facility director. Certified operators not meeting this requirement must be supervised by a reactor leader while performing operations until they satisfactorily perform these manipulations.

b. Absence from certified functions A certified operator who has not actively performed certified functions for 4 months must demonstrate satisfactory knowledge and proficiency to the appropriate reactor facility director, reactor leader, or reactor supervisor before returning to certified duties.

c. Suspension from certified duties. Suspension temporarily habits an individual from performing any certified duties until all corrective conditions are met, as determined by the reactor fi director. A suspension may not exceed 120 calendar days; and the reactor facility director must notify his or her major suborns command if all corrective conditions cannot be fulfilled within that time. Operator suspensions will be handled IAW PRP require in AR 50–5.

8–8. Operator decertification

Each reactor facility director, responsible commander, and MA commander have authority to decertify an operator based on m disqualification, lack of proficiency, or to ensure the safety or security of a nuclear reactor system. Decertification is not punitive does not constitute grounds for administrative or disciplinary U but authorities may use the information leading to decertification appropriate actions. The decertification authority must notify appropriate reactor facility director, responsible coma MACOM commander, and Army Reactor Office as applicable appropriate reactor facility director must personally notify the decertified individual verbally and in writing IAW AR 50–5.

8–9. Duty hour limitations

Directors of reactor facilities will establish duty hour limitations ensure safe operations.

Table 8–1
MAJOR TRAINING CATEGORIES

Training category	Required topics
Theory and Principles of Reactor Operation	nuclear, radiation, reactor theories; thermodynamics; heat transfer; fluid flow
Facility Design and Operating Characteristics	safety and emergency systems; facility design, operating characteristics and safety analyses; nuclear safety–related utilities; and experiment and test facilities.
Facility Instrumentation and Control Systems	nuclear and process instrumentation, control systems, and experimental instrumentation and controls.
Normal, Abnormal, and Emergency Procedures	normal, abnormal, and emergency procedures and administrative controls.
Radiological Control and Safety	special nuclear material and radioactive materials handling, safe practices, and radiation protection and instruments.
Administration	administrative controls, rules, applicable regulations, and permits.
Technical Specifications	technical specifications.
Security	security procedures and requirements to include two person rule.
Fuel Handling (excluding operators)	procedures and criticality controls, rules, and limitations.
Maintenance Tasks	tasks required to maintain the facility.

Appendix A
References

Section I
Required Publications

AR 15–22
Nuclear Weapons Accident Investigation Board (CONUS).(Cited in para 1–4.)

AR 40–5
Preventive Medicine. (Cited in para 1–4 and 4–10.)

AR 40–14
Control and Recording Procedures for Exposure to Ionizing Radiation and Radioactive Materials. (Cited in para 4–10.)

AR 50–5
Nuclear and Chemical Weapons and Material—Nuclear Surety. (Cited in para 1–4, 1–10, 4–10, 6–4,7–3, and 8–8.)

(C)AR 50–5–1
Nuclear Weapon Security. (Cited in para 1–4.)

AR 190–54
Security of Nuclear Reactors and Special Nuclear Materials. (Cited in para 1–4, 1–10, 4–6, and B–8.)

AR 380–67
Personnel Security Program. (Cited in para 1–4.)

AR 385–10
Army Safety Program. (Cited in para 1–4.)

AR 385–ll
Ionizing Radiation Protection(Licensing, Control, Transportation, Disposal and Radiation Safety).(Cited in para 1–4 and 4–10.)

AR 385–40
Accident Reporting Records. (Cited in para 1–10.)

TB 43–180
Calibration and Repair Requirements for the Maintenance of Army Materiel. (Cited in para 4–10.)

Section II
Related Publications

AR 15–l
Committee Management.

AR 20–1
Inspector General Activities and Procedures.

AR 25–55
The Department of the Army Freedom of Information Act Program.

AR 25–400–2
The Modern Army Record keeping System (MARKS).

AR 40–13
Medical Support–Nuclear/Chemical Accidents and Incidents.

AR 40–66
Medical Record Administration.

AR 50–111
Temporary Storage of Energy Research and Development Administration Nuclear Shipments at Military Installations.

AR 75–15
Responsibilities and Procedures for Explosive Ordnance Disposal.

AR 190–13
The Army Physical Security Program.

AR 190–28
Use of Force by Personnel Engaged in Law Enforcement and Security Duties.

AR 190–40
Serious Incident Report.

AR 200–2
Environmental Effects of Army Actions.

AR 310–49
The Army Authorization Documents System (TAADS).

AR 360–5
Public Information.

AR 380–13
Acquisition and Storage of information Concerning Nonaffiliated Persons and Organizations.

AR 381–10
U.S. Army Intelligence Activities.

AR 381–12
Subversion and Espionage Directed Against U.S. Army (SAEDA) .

AR 381–20
The Army Counterintelligence Program.

AR 381–45
Investigative Records Repository.

AR 500–60
Disaster Relief.

AR 525–13
The Army Combating Terrorism Program.

AR 530–1
Operations Security (OPSEC).

AR 600–8–10
Leaves and Passes.

AR 600–8–104
Military Personnel Information Management/Records.

AR 600–37
Unfavorable Information.

AR 600–85
Alcohol and Drug Abuse Prevention and Control Program.

AR 680–29
Military Personnel–Organization and Type of Transaction Codes.

DA Pam 310–20
Administrative Publications:Action Officer's Wide.

DA Pam 738–750
Functional Users Manual for The Army Maintenance Management System (TAMMS).

TM 39–4–1
Glossary of Nuclear Weapons Material and Related Terms.

TM 39–25–1
Department of Defense Nuclear Weapons Technical Inspection System.

DODD 3025.1
Military Support to Civil Authorities (MSCA).

DODD 5100.52
DOD Response to an Accident or Significant Incident Involving Radioactive Materials.

DODD 5210.41
Security Policy for Protecting Nuclear Weapons.

DOD 5210.41–M
Nuclear Weapons Security Manual.

DODD 5210.42
Nuclear Weapon Personnel Reliability Program (PRP).

DODD 5210.63
Security of Nuclear Reactors and Special Nuclear Material.

CJCSI 3150.03
Joint Reporting Structure Event and Incident Reports.

Section III
Prescribed Forms
This section contains no entries.

Section IV
Referenced Forms
This section contains no entries.

Appendix B
Reactor Audits

B–1. Unit Reactor Program
a. Ensure that unit program complies with this and other required regulations.

b. Evaluate management of unit and MSC programs.

c. Review all safety–related aspects of facility operations.

d. Verify functional managers are ensuring individuals complete initial reactor safety training before working with nuclear reactor systems.

e. Review accident and incident reporting IAW AR 50–5.

f. Review facility annual reports.

g. Confirm compliance with previous audits and inspections.

h. Evaluate unit's program for conducting internal reviews and audits and its implementation procedures.

i. Review the Reactor Safeguards Committee minutes.

j. Ensure compliance with the technical specifications and Facility Safety Analysis Report.

k. Confirm the adequacy of installation support (including safety, medical, radiation protection, security, fire protection, and disaster preparedness).

B–2. Administrative requirements
a. Determine the adequacy of the staff's size and its technical qualifications.

b. Evaluate effectiveness of the PRP.

c. Review the occupational health and safety program.

d. Evaluate external support provided by activities outside the control of the reactor staff (including safety, medical, security, radiation protection, fire protection, disaster preparedness, and calibration).

e. Evaluate the availability and accuracy of required technical orders, instructions, and manuals; permits and amendments;and safety analysis reports and technical specifications.

f. Review the currency and adequacy of documentation (suns unit plans, operating orders, and instructions) in the areas of re safety, security, accident and incident response, and emergency evacuation.

B–3. Training and requalification
a. Evaluate the training and requalification programs for the facility staff.

b. Review procedures for selecting and training facility personnel.

B–4. Faculty construction
a. Verify that all major modifications to nuclear safety–related facility systems were subjected to a quality assurance program view.

b. Ensure all nuclear safety–related facility systems are functioning as intended and are being tested and operated according established procedures and documents submitted.

c. Ensure the facility and all nuclear safety–related facility systems are being maintained properly.

d. Review the currency of as–built facility drawings.

B–5. Radiation protection
a. Evaluate the reactor facility radiation protection program ensure personnel occupational exposure to radiation is maintained within established federal guidelines and is as low as reactor achievable (ALARA).

b. Review the management policy and organizational strums for implementing the radiation protection program.

c. Evaluate the adequacy of radiation detection and monitor systems.

d. Evaluate policies, methods, frequencies, and procedures conducting radiation surveys.

e. Examine personnel exposure records and processing of personnel monitoring systems.

f. Confirm compliance with the technical specifications Safety Analysis Report.

g. Evaluate the facility's ability to control, collect, handle, document, process, store, and release radioactive materials and to dispose of liquid, gaseous, and solid wastes that may contain radioactive material.

h. Review records of radioactivity releases into the environ]beyond the facility operations boundary and environmental impacts relating to exposure of the general public and surrounding environs in comparison with established regulations and risks.

B–6. Reactor operations
a. Observe facility operations, including representative reactors operations and checklists.

b. Review all nuclear safety–related aspects of facility operations including the ALARA program.

c. Review the staff's compliance with approved operating p procedures, and prescribed standards.

d. Confirm administrative and operating procedures for row operations and maintenance, as well as abnormal and emerge activities, provide for safe execution.

e. Ensure compliance with instructions, plans, procedures, tee cal specifications, and the Facility Safety Analysis Report.

f. Evaluate the operability of the reactor instrumentation and control system.

g. Review documentation of facility operations, maintenance surveillance activities.

h. Review documentation of abnormal occurrences, malfunctions and unscheduled scrams and the corrective actions taken.

i. Evaluate experiment review, approval, and control procedures

j. Examine facility modifications to ensure nuclear safety security concerns were adequately addressed.

B–7. Emergency response
a. Review emergency plans and procedures for the facility, and emergency support organizations and personnel.

b. Verify compliance with the instructions, plans, and technical specifications of the facility.

c. Examine emergency response equipment.

d. Review for adequacy and compliance the procedures for identifying, training, making formal appointment, and retraining emergency personnel from within the facility staff and from outside emergency support organizations.

e. Observe an emergency exercise.

B–8. Faculty security

a. Review physical security plans and procedures.

b. Ensure facility security systems and requirements are fully operational and comply with AR 190–54.

c. Evaluate badge, lock, and key control systems.

d. Observe a security exercise.

Glossary

Section I
Abbreviations

ALARA
As Low As is Reasonably Achievable when used in conjunction with radiation exposure.

ARC
Army Reactor Council (see para 1–8).

ARO
Army Reactor Office (see para 1–9).

ARPM
Army Reactor Program Manager (see para 1–9).

Section II
Terms

Deactivation
The removal of fuel or any components that would create criticality within a reactor.

Decommissioning
The removal of a facility safely from service and reduction of residual radioactivity to a level that permits release of the property for unrestricted use and termination of permit.

Nuclear management evaluation
An evaluation conducted by the DA or MACOM IG of nuclear operations with inquiry into the nuclear functions and responsibilities of staff agencies, inspection teams, major and intermediate command levels, and assistance teams to determine management, systemic, or functional problem areas in the Army nuclear programs attributable to any echelon.

Nuclear reactor
A mechanical device in which fissile material is used to produce a controlled, chain reaction (nuclear fission) to produce heat and radiation for practical application and research, development, and testing.

Nuclear reactor facility
A nuclear reactor system, associated buildings, auxiliary equipment, and the reactor staff required for its operation, maintenance, and support.

Nuclear reactor system
Any equipment or device, except a nuclear weapon or weapon component, capable of neutron multiplication through nuclear fission of special nuclear material. This definition includes both critical and subcritical nuclear reactors, subcritical assemblies of special nuclear material, and the supporting associated equipment or devices(if any).

Off–site
That area beyond the boundaries of a DOD installation including the area beyond the boundary of a national defense area or national security area that has been, or may become affected by a nuclear accident or incident.

Reactor facility director
The chief of the organizational unit directly responsible for the operation of a nuclear reactor staff. The term“reactor facility director” as used in this regulation applies to both research and power nuclear reactor systems.

Reactor facility inspection
A DA or MACOM IG inspection that includes examination of the capability of a nuclear reactor facility to perform specific tasks involving the nuclear reactor and associated equipment, to provide a safe and secure environment, to provide a safe and secure environment for the nuclear material and reactor, and to determine if essential administration and support is provided the unit.

Reactor operations staff
Includes all organizational elements subordinate to the reactor facility director and responsible for the operation, maintenance, and support of the specific nuclear reactor involved.

Reactor Safety Manager (RSM)
A reactor safety manager is a representative of the responsible commander, independent of the reactor staff, who supervises the reactor safety program and reports safety issues to the reactor facility director and responsible commander.

Responsible commander
The immediate commander of the organization directly accountable for the nuclear reactor facility.

Source material
Uranium or thorium, or any combination thereof, in any physical or chemical form or ores which contain by weight 0.05% or more of uranium, thorium, or any combination thereof. Source material does not include special nuclear material.

Special nuclear material
a. Plutonium, uranium 233, uranium enriched in the isotope 233 or in the isotope 235, and any other material that the Nuclear Regulatory Commission, pursuant to the provisions of section 51 of the Atomic Energy Act of 1954, section 2071, title 42, United States Code, determines to be special nuclear material.
b. Any material artificially enriched by any of the foregoing but does not include source material.

Special safety analysis report (SSAR)
A modification to a reactor system which involves an unresolved safety question or a change to the technical specifications will be documented in a SSAR and submitted to the ARC for review. This report will describe any proposed changes involved in the technical specification limits of the nuclear reactor system operation and provide an analysis and evaluation demonstrating the safety of this change.

Unresolved safety question
The addition or change of a component, function, or procedure in the nuclear reactor facility which could result in exceeding the margin of safety as defined in the technical specification, or which could change the reactor facility design.

Section III
Special Abbreviations and Terms
This section contains no entries.

Index
Army Reactor Council

This index is organized alphabetically by topic and subtopic. Topics and subtopics are identified by paragraph number.

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